

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

APPLICANTS: ANDREAS GERKEN ET AL. - 1
SERIAL NO.: 10/716,128 EXAMINER: B. MUSSER
FILED: NOVEMBER 18, 2003 GROUP: 1733
TITLE: METHOD FOR THE MANUFACTURE OF A MOLDED BODY FIRMLY
BONDED TO A GRAINED OR STRUCTURED MOLDED SKIN AND A
DEVICE FOR PERFORMING THE METHOD

REPLY BRIEF

MAIL STOP APPEAL BRIEF
Assistant Commissioner for Patents
P.O. Box 1450
Alexandria, VA 2313-1450

Dear Sir:

Appellants herewith submit a Reply Brief pursuant to 37 C.F.R. 41.41 in response to the Examiner's Answer dated July 11, 2007.

I. Examiner's Answer at page 3, first paragraph under section (9) to page 5 third paragraph and paragraph 10 bridging pages 10-11

In regard to the rejection of claims 1, 7, 10, 12 and 13 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,259,673 to *Ericson* in view of International Publication No. WO 02/26461 to *Malfliet* and International Publication No. WO 01/26883 to *Demoe*, in the Examiner's view it would have been obvious to one of ordinary skill in the art to: (1) use an elastic skin with a grain pattern in the method according to *Ericson* rather than give the film the pattern of the mold surface since this would prevent the mold seams from being present in the final product; and (2) heat the mold of *Ericson* and *Malfliet* using channels in the top and bottom of the mold as shown

in *Demoe*, since this was said to be a known alternative in the art and would reduce the required amount of equipment and movement of the mold.

These rejections are respectfully traversed as they are believed to be in error for the following reasons.

The claimed invention relates to a method for producing a molded body firmly bonded to a grained or structured molded skin. The method includes the step of inserting a spatially conformed, elastic skin having a graining or structuring on an inside thereof, into a receiving mold of a tool bottom part, the mold being open on one side so that an outside of the elastic skin abuts and is stabilized by an inner wall of the receiving mold.

A liquid plastic film with a predefined film thickness is applied to the grained or structured inside of the elastic skin and the plastic film is hardened so that a molded skin is formed. The molded skin is back-foamed under the influence of heat after hardening to form the molded body and a firm bond between the molded body and the molded skin is formed by introducing reactive foaming agents into an intermediate space that is delimited by an inside of the molded skin and a spatially conformed tool top part, which is inserted into the receiving mold of the tool bottom part to close the mold. The dimensions of the intermediate space and thus also of the foam that forms the molded body are defined by contours of the molded skin and the tool top part and the intermediate space is sealed off by the tool top part during foaming.

The elastic skin, molded skin and the molded body are removed all together in a single assembly from the receiving mold of the tool bottom part, the tool top part being removed either before or after the removal of the assembly.

The elastic skin is stripped from the molded skin, which is firmly bonded with the molded body, so that a graining or structuring remains on the surface of the molded skin after the elastic skin is stripped away. The tool top part is heated via at least one heating channel extending in the tool top part.

The primary reference to *Ericson* discloses a method for producing a plastic part from a laminate material of a vinyl polymer film and a foam applied to the back. The production is simplified, by means of a certain viscosity of the vinyl polymer, a certain nozzle pressure, and a certain temperature, in such a manner that the vinyl polymer layer can be introduced into the mold using a spray device, and not, as was usual up to that time, placed into a mold in liquid form. Back-foaming is also disclosed.

The Examiner has taken the position that it would have been obvious to use an elastic skin with a grain pattern in the method according to *Ericson* rather than give the film the pattern of the mold surface since this would prevent the mold seams from being present in the final product. *Ericson*, however, includes no teaching, suggestion or disclosure regarding the provision of a grain pattern on the surface of the plastic vinyl polymer layer of the part to be produced. Rather, the method according to *Ericson* is primarily concerned with the exterior contour of the molded part.

In particular, according to *Ericson*, the method disclosed therein produces a composite article having "an exterior vinyl polymer cover sheet of a substantially uniform gauge having a surface structure comprising an exact replica of the texture of the mold surface cavity" (*Ericson*, column . 9, lines 5-9). Moreover, there is no suggestion in *Ericson* that the sprayed-on vinyl polymer film described therein results in mold seams in the finished product or that an elastic skin could or should be used to prevent such seams.

Accordingly, there is no suggestion in the primary reference to *Ericson* or in any of the secondary references, to modify the method according to *Ericson* to include the steps of inserting an elastic skin having a graining on the inside, applying a film to the elastic skin to form a molded skin, and stripping the elastic skin from the molded skin after removal from the mold as recited in Appellants' pending claims 1, 7, 10, 12 and 13.

The Examiner has further taken the position that it would have been obvious to heat the mold of *Ericson* and *Malfliet* using channels in the top and bottom of the mold as shown in *Demoe*, since this is said to be a known alternative in the art and would reduce the required amount of equipment and movement of the mold.

Ericson discloses only placing the mold in an oven after pouring the urethane foam reaction mixture into the mold cavity. (See *Ericson* column 8, line 71- column 9, line 3). *Ericson* fails to teach or suggest the desirability of heating a top tool part via at least one heating channel as recited in Appellants' pending claims 1, 7, 10, 12 and 13.

The secondary reference to *DeMoe* relates to a mold tool having a plurality of heat lines 24 running through the mold tool adjacent the upper and lower mold surfaces for heating the mold cavity, as well as cooling lines 30 in the lower mold adjacent the split line for cooling the split line to prevent the portion of the skirt disposed therein from being heated.

As set forth in Appellants' Brief, a person skilled in the art lacks any explanation why he/she should modify the method according to *Ericson* to replace the method of oven heating with the more costly and complicated method of heating the top tool part via heating channels extending in the tool top part. In particular, the formation of heating channels/heating pipes within a movable die mold requires an enormous apparatus expenditure with regard to feed lines and pipelines, which is only justified if better heating or cooling can be achieved. In contrast, heating in an oven, as disclosed in *Ericson*, would be significantly easier to carry out.

Accordingly, it is respectfully submitted that there is nothing in any of *Ericson*, *Malfliet* or *Demoe* that would lead one skilled in the art to make the modifications proposed by the Examiner. Since there is no teaching or suggestion in the references to combine the teachings of *Ericson*, *Malfliet* and *Demoe* to achieve the present invention, which solves a completely different problem than that addressed by *Ericson*, Appellants respectfully submit that claims 1, 7, 10, 12 and 13 are patentable over the cited references, taken either singly or in combination.

II. Examiner's Answer at page 5, fourth paragraph to fifth paragraph

With respect to dependent claim 3, *Jourquin* is said to teach that articles made of similar materials in similar ways for similar end uses use an open cell foam. In the Examiner's view, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the foam of *Ericson*, *Malfliet*, and *DeMoe* open cell as in *Jourquin*.

For the reasons set forth above however, it is respectfully submitted that there is nothing in any of *Ericson*, *Malfliet* or *Demoe* that would lead one skilled in the art to make the modifications proposed by the Examiner. Accordingly, Appellants respectfully submit that claim 3 is patentable over the cited references.

III. Examiner's Answer at page 6, first paragraph to page 8, second paragraph and page 11, first full paragraph

In regard to the rejection of claims 1, 8 and 9 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,938,993 to *Greene* in view of *Malfliet*, *Ericson* and *Demoe*, in the Examiner's view it would have been obvious to one of ordinary skill in the art to modify the method according to *Greene* to: (1) insert the silicone skin and remove it together with the skin coating and the foam mixture to allow re-use of the mold as taught by *Malfliet*, since the shape of the article would make it difficult to remove without destroying the mold or also removing the silicone layer; (2) inject the foam after closing the mold as taught by *Ericson* as a known alternative to closing the mold after injecting the foam and since this would insure that the foam did not temporarily expand larger than the desired final shape, possible causing problems

when the reacting foam was re-compressed in the mold: (3) heat the molds using channels in the top and bottom of the mold since *DeMoe* shows this is a known method and since this would insure the foamable mixture heated and cured adequately: (4) pour or inject the skin layer using a tool top part to delimit the shape of the skin layer since *Malfliet* shows this is a known alternative in the art for applying the skin layer to the interior of a mold; and (5) include a channel in the top tool part used to form the skin and to heat the skin using the channel, since *DeMoe* shows that it is known to use channels to heat a mold and since this would dry the skin layer quickly.

These rejections are respectfully traversed as they are believed to be in error for the following reasons.

The primary reference to *Greene* describes a method in which the mold is produced from silicone. (See *Greene* column 2, lines 36-37, column 4, lines 39-42) *Greene* does not disclose or suggest an elastic skin that covers the actual mold wherein the elastic skin has a graining or structuring on the inside, said graining or structuring remaining on the surface of a molded skin once the elastic skin is stripped away as recited in claims 1, 8 and 9.

Contrary to the Examiner's position, the silicone mold of *Greene* is not a skin in the sense that it form the outermost layer of the mold. Elements 9 and 12 shown in *Greene* are mother molds, made of for example fiberglass and epoxy, and provide structural support for the silicone mold (*Greene*, column 4, lines 39-42). It is the

silicone material (17), however which makes up the mold in *Greene* and dictates the shape of the molded part.

Although *Greene* teaches that the entire mold, or significant surface parts of the mold, respectively, as such consist of silicone material, neither *Greene* nor *Malfliet*, *Ericson* or *Demoe* give a person skilled in the art any suggestion or motivation to configure the silicone mold taught by *Greene* as a thin skin and to cover a mold consisting of a different material with it, in order to solve the problems of seam formation between individual mold parts. Moreover, as the silicone (elastic) material of *Greene* constitute the mold itself, *Greene* fails to disclose, teach or suggest the step of “removing the elastic skin, molded skin, and the molded body all together in a single assembly from the receiving mold of the tool bottom part” as recited in Appellants’ claim 1.

There is no disclosure in *Greene* that would motive a person skilled in the art to shape the surface skin of *Greene* using an inserted die, in order to adjust the precise layer thickness of the skin layer as recited in Appellants’ claims 8 and 9. Figures 5a-6b of *Greene* show the production method according to *Greene*, and teach a person skilled in the art specifically that no die at all is required for production of the skin layer 20. In particular, a person of ordinary skill in the art would not be motivated to modify the method taught in *Greene* to incorporate an upper, auxiliary tool top part inserted into the receiving mold of the tool bottom part in order to achieve a precise predefined film thickness, as set forth in dependent claims 8 and 9.

Thus, combining the teachings of *Greene* with *Malfliet*, *Ericson* or *DeMoe* is improper, as there is no suggestion in *Greene* that the problems solved by the claimed method could be accomplished by combination with selective aspects of these references. Accordingly, Appellants respectfully submit that claims 1, 8 and 9 are patentable over the cited references, taken either singly or in combination.

IV. Examiner's Answer at page 8, third paragraph to page 9, first paragraph

With respect to dependent claim 11, *Staneluis* is said to teach that articles made with polyurethane skins and polyurethane foam cores in molds can have thermosetting skins. In the Examiner's view, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the molded skin according to *Greene* thermosetting, since *Staneluis* discloses that articles made with polyurethane skins and polyurethane foam cores in molds can have thermosetting skins.

For the reasons set forth above however, it is respectfully submitted that neither *Greene* nor *Malfliet*, *Ericson* or *Demoe* give a person skilled in the art any suggestion or motivation to make the modifications to *Greene* proposed by the Examiner. Accordingly, Appellants respectfully submit that claim 11 is patentable over the cited references.

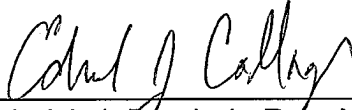
V. Evidence and Related Proceedings Appendices

Evidence and Related Proceedings Appendices are attached indicating "None."

CONCLUSION

For the reasons presented in the Appeal Brief and the reasons presented above, Appellants believe that the Appealed claims are allowable over the cited prior art references, and respectfully request that the Board of Patent Appeals and Interferences reconsider the rejection of the appealed claims and reverse the decision of the Examiner in whole.

Respectfully submitted,
ANDREAS GERKEN ET AL.



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Enclosure: Evidence Appendix, Related Proceedings Appendix

CERTIFICATION OF ELECTRONIC FILING

I hereby certify that this correspondence is being electronically filed in the U.S. Patent and Trademark Office on September 11, 2007.



Edward J. Callaghan

APPENDIX A

Appendix A: Evidence Presented
Applicant is not submitting any additional evidence with this Reply Brief.

APPENDIX B

RELATED APPEALS AND PROCEEDINGS:
None.